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CHAPTER III

FLOWS, STOCKS AND ACCOUNTING RULES

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III. FLOWS, STOCKS AND ACCOUNTING RULES

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III. FLOWS, STOCKS AND ACCOUNTING RULES

List of Acronyms

c.i.f.	cost, insurance, freight
f.o.b.	free on board
IMF	International Monetary Fund
NPI	non-profit institution
VAT	Value added tax

III. FLOWS, STOCKS AND ACCOUNTING RULES

A. Introduction

1. This chapter deals with the basic nature of the entries in the accounts and tables of the System. First, it defines the nature of flows and stocks. These are the two basic forms in which information about the economy can be recorded in a system of national accounts, flows referring to actions and effects of events that take place within a period of time and stocks referring to a position at a point of time. Second, it explains the rules of accounting that underlie the recording of flows and stocks. The discussion in this chapter is a general one; definitions of specific flows and stocks and specific applications of the accounting rules appear in later chapters.

2. Two general characteristics of the entries in the accounts should be emphasized. The first characteristic is that the stocks and flows are exhaustive within the boundaries defined; every flow and every stock must be reflected in the accounts. The second characteristic is the rigorousness that arises because the System is integrated and consistent. The same concepts, definitions and classifications of flows and stocks are applied to all accounts, and each flow or stock is recorded consistently for the parties involved.

3. To help ensure consistency, the System applies rules with respect to valuation, timing and grouping of flows and stocks in implementing the quadruple entry principle, described in <chapter II, Overview>. These rules, which are explained in more detail later in the chapter, may be summarized to provide a context for the discussion of the nature of flows and stocks, which follows immediately.

- Flows and stock must be recorded consistently with respect to their valuation. Entries are at current value on the market - that is, the amount agreed upon by two parties - or at its closet equivalent. The value on the market may need to be adjusted to the coverage of the flow or stock as defined in the System and expressed appropriately given the nature of the flow or stock with respect to taxes and subsidies on products, transport costs and trade margins.

- Flows and stocks must be recorded consistently with respect to timing. Flows are recorded at the moment of accrual within the accounting period - that is, the moment economic value is created, transformed, exchanged, transferred or extinguished. Stocks are recorded at the moment to which the account relates, typically the beginning or end of the accounting period.

- Individual flow and stock entries must be recorded consistently with respect to their grouping, at a minimum, according to categories in the classifications of transactions, other flows and assets and according to the categories in the classification of transactors as (sub)sectors or industries. Depending on the

character of the entry, a distinction should be made between resources and uses or between assets and liabilities. In the process of grouping, netting is implicit for several items, but consolidation is not advised.

4. It should be noted that as a result of the application of these rules to all flows and stocks, flows and stocks are completely integrated - that is, stocks result from the accumulation of flows.

B. Stocks and Flows

5. The System's accounts and tables contain information relating to the economic actions and the effects of events that take place within a given period of time and information relating to a position in assets and liabilities at the beginning and end of that period. The entries in the accounts and tables relating to actions and effects of events within a given period of time are flows and balancing items derived from them. The entries in the accounts and tables relating to assets and liabilities at a given point of time are stocks and balancing items derived from them.

6. Stocks appear in the Balance Sheets and related tables (and, for certain stocks, with the use table in an input-output context). Flows appear in all the other accounts and tables of the System. The flow accounts in the full sequence of accounts for institutional sectors consist of the current accounts, which deal with production, income and use of income, and the accumulation accounts, which show all changes between two balance sheets.

7. The flows and stocks are grouped according to the System's hierarchical classifications, shown in an annex at the end of the manual. The classification of transactions and other flows has four headings at the highest level, according to the nature of the flows. The classification of stocks in the Balance Sheets is by type of asset (liabilities being viewed as negative assets).

8. The flows and stocks are entered in the accounts of the institutional units involved and, accordingly, in the accounts of the sectors into which the institutional units are grouped. In general, flows and stocks are entered in the accounts of the institutional units that own or owned the goods and assets involved, in the accounts of units that deliver or take delivery of services, or in the accounts of units that provide labour and capital or use them in production. Flows relevant to establishments are entered in the accounts of the establishments involved and, accordingly, in the accounts of the industries into which establishments are grouped.

C. Flows

9. Economic flows reflect the creation, transformation, exchange, transfer or extinction of economic value; they involve changes in the volume, composition, or value of an institutional unit's assets and liabilities. Mirroring the diversity of the economy, economic flows have specific natures as wages, taxes, interest, capital flows, etc., that record the ways in which a unit's assets and liabilities are changed.

10. All entries in the accounts have to be measured in terms of money, and therefore the elements from which the entries are built up must be measured in terms of money. In some cases, the amounts entered are the actual payments that form part of flows that involve money; in other cases, the amounts entered are estimated by reference to actual monetary values.

11. Economic flows are of two kinds. Most flows are transactions. Flows included in the System that do not meet the characteristics of transactions as described below are called "other flows". Transactions appear in all of the accounts and tables in which flows appear except two; other flows appear only in these two. The two are accumulation accounts, the Other Changes in the Volume of Asset Account and the Revaluation Account. More meaning can be given to the definition of flows by describing the two kinds.

1. Transactions

12. A transaction is an economic flow that is an interaction between institutional units by mutual agreement or an action within an institutional unit that it is analytically useful to treat like a transaction, often because the unit is operating in two different capacities.

13. Institutional units, referred to in the definition, are the fundamental economic units of the System (see <chapter IV, Institutional Units and Sectors>). The following are the main attributes of institutional units that are relevant to their engaging in transactions:

- They are entitled to own goods or assets in their own right, and therefore are able to exchange them.
- They are able to take economic decisions and engage in economic activities for which they are held to be directly responsible and accountable at law.
- They are able to incur liabilities on their own behalf, to take on other obligations or future commitments and to enter into contracts.

14. The definition of a transaction stipulates that an interaction between institutional units be by mutual agreement. When a transaction is undertaken by mutual agreement, the prior knowledge and consent of the institutional

units is implied. This does not mean, however, that both units necessarily enter a transaction voluntarily, because some transactions are imposed by force of law, such as payments of taxes or other compulsory transfers. Although individual institutional units are not free to fix the amounts of taxes they pay, there is nevertheless collective recognition and acceptance by the community of the obligation to pay taxes. Thus, payments of taxes are considered transactions despite being compulsory.

15. Transactions take so many different forms that, even with these explanations, any general definition is inevitably rather imprecise. To give more precision, the various kinds of transactions have to be systematically described and classified. A first distinction is between monetary and non-monetary transactions. Other distinctions, such as between transactions with and without counterparts, are drawn within each of these kinds of transactions.

a. Monetary transactions

16. A monetary transaction is one in which one institutional unit makes a payment (receives a payment) or incurs a liability (receives an asset) stated in units of currency. In the System, all flows are recorded in monetary terms, but the distinguishing characteristic of a monetary transaction is that parties to the transaction express their agreement in monetary terms. For example, a good is purchased/sold at a given number of units of currency per unit of the good, or labour is hired/provided at a given number of units of currency per hour or day.

17. All monetary transactions are inter-actions between institutional units; that is, all monetary transactions are two-party transactions. The following is a list of common monetary transactions:

- Expenditure on consumption of goods and services,
- Acquisition of a security,
- Wages and salaries,
- Interest, dividends and rent,
- Taxes,
- Social assistance benefits in cash.

(i) Transactions with and without counterparts

18. The expenditure on consumption of goods and services, the acquisition of a security, the wages and salaries, and the interest, dividends, and rent are two-party transactions in which one party provides a good, service, labour or asset to the other and receives a counterpart in return. This kind of transaction is sometimes called a "something for something" transaction or a transaction with a quid pro quo. Exchanges consist of such transactions.

19. Taxes and social assistance benefits are examples of two-party transactions in which one party provides a good, service or asset to the other but does not receive a counterpart in return. This kind of transaction, sometimes called a "something for nothing" transaction or a transaction without a quid quo pro, is called a transfer in the System.

20. The scope of the counterparts mentioned in describing exchanges and transfers does not cover entitlement to contingent benefits or collective services. Such benefits are generally uncertain or not quantifiable, or both. Moreover, the amount of benefit that may eventually be received by an individual unit is not proportional to the amount of the previous payment and may be very much greater or smaller than the latter. Thus, payments such as a social insurance contribution or a non-life insurance premium may entitle the unit making the payment to some contingent future benefits, and a household paying taxes may be able to consume certain collective services provided by government units, but these payments are regarded as transfers rather than exchanges.

21. Transfers may be either monetary or non-monetary (see the later discussion of non-monetary transfers). When transfers that are otherwise the same may be either monetary or non-monetary, as is true for social assistance benefits mentioned as an example, the two kinds are distinguished by calling the former a transfer in cash and the latter a transfer in kind. Actually, "in cash" is not fully descriptive because these transfers may provide either currency or a transferable deposit.

22. Another distinction is made within transfers - a distinction between current and capital. A capital transfer is one in which the ownership of an asset is transferred or which obliges one or both parties to acquire, or dispose of, an asset. Capital transfers, which may be either in cash or in kind, redistribute saving or wealth. They include, for example, capital taxes and investment grants. Other transfers are described as current. Current transfers, which also may be either in cash or in kind, redistribute income. They include, for example, taxes on income and social benefits.

(ii) Rearrangements of transactions

23. Monetary transactions may not always be recorded in the accounts in the same way as they appear to the institutional units involved. The values of these actual, or observed, transactions are already available in the accounts of the units concerned, but the System rearranges certain transactions to bring out the underlying economic relationships more clearly. The three kinds of rearrangements affect the channels in which the transactions are seen as taking place, the number of transactions that are seen as taking place, or the units that are seen as being involved. The three sections below illustrate the main characteristics of these rearrangements and the kind of analytical purpose they serve.

(a) Rerouting transactions

24. Rerouting records a transaction as taking place in channels that differ from the actual ones or as taking place in an economic sense when it actually does not. In the first kind of rerouting, a direct transaction between unit A and unit C is recorded as taking place indirectly through a third unit B, usually, however, with some change in the transaction category.

25. The recording of the payment of social security contributions is an example of the first kind of rerouting. Employees' social security contributions are recorded in the System as paid by employees out of their wages and salaries, while employers' social security contributions are recorded as constituting a part of compensation of employees. However, neither the employees' nor the employers' contributions are usually paid out to employees. Instead, they are paid directly by employers to social security funds. This arrangement is administratively convenient and efficient. However, as social security contributions are actually payable out of compensation of employees, they are shown as such in the accounts. Social security contributions are thus recorded strictly according to the general principles governing the recording of transactions in the System to bring out the economic substance behind arrangements adopted for administrative convenience. As a result of the rerouting, employer's social contributions are included as a part of labour cost.

26. An example of the second kind of rerouting is provided by the treatment of the retained earnings of foreign direct investment enterprises. The retention of some or all of the earnings of a foreign direct investment enterprise within that enterprise can be regarded as a deliberate investment decision by the foreign owners. Accordingly, the retained earnings are rerouted in the System by showing them as first remitted to the foreign owners as property income and then reinvested in the equity of the direct investment enterprise.

27. Similarly, the property income earned on the reserves of life insurance funds is deemed to be paid out to policy holders and then reinvested in additional equity even though in actuality the property income is retained by

the insurance enterprises. As a result, the saving of persons or households includes the amount of the rerouted property income while the saving of insurance enterprises does not. This alternative picture of saving is indeed the purpose of the rerouting.

(b) Partitioning transactions

28. Partitioning records a transaction that is a single transaction from the perspective of the parties involved as two or more differently classified transactions. For example, the rental actually paid by the lessee under a financial lease is not recorded as a payment for a service; instead, it is partitioned into two transactions, a repayment of principal and a payment of interest. This partitioning of the rental payment is part of a treatment that implements an economic view of financial leasing in the System. Financial leasing is viewed as a method of financing the purchase of capital equipment, and a financial lease is shown in the System as a loan from the lessor to the lessee.

29. Another example is the treatment of certain financial services. For example, the System partitions interest actually paid and actually received by financial intermediaries into two components. One component represents interest while the remainder represents the purchase of intermediation services for which the intermediaries do not charge explicitly. This partitioning to make the service item explicit affects intermediate and final consumption of particular industries and institutional sectors - indeed, that is a purpose of the reclassification - and also affects gross domestic product. However, the saving of all the units concerned, including the financial intermediaries themselves, is not affected.

30. The System's recording of transactions for wholesalers and retailers does not mirror the way in which those involved view them. The purchases of goods for resale by wholesalers and retailers are not recorded explicitly, and they are viewed as selling, not the goods, but the services of storing and displaying a selection of goods in convenient locations and making them easily available for customers. This partitioning implements the System's measure of output for traders, which is by the value of the margins on goods they purchase for resale.

(c) Recognizing the principal party to a transaction

31. In recognizing the principal party, a transaction is recorded as taking place directly between the ultimate, or principal, owner or recipient and the other party, rather than between the agent or intermediary of the principal owner or recipient and the other party. The purpose is to go behind the agent or intermediary role to record the transaction in the accounts of the unit for which the transaction affects the volume, composition or value of assets and liabilities. In the process, some intermediation service performed may be recognized as output.

32. For example, purchases a commercial agent makes under the orders of, and at the expense of, another party are directly attributed to the latter. The accounts of the agent only show the fee charged to the principal for intermediation services rendered.

33. A second example is the collection of taxes and the payment of subsidies, social benefits, etc., by one government unit on behalf of another. A central government may, for example, serve as an intermediary for local governments in collecting taxes. Then, if the central government lacks discretion about the amount of collection or distribution of the relevant monies, the transactions are recorded directly in the accounts of the local government. In general, tax revenues will be allocated directly to the non-collecting government when (1) it has full or partial authority over the setting of the tax or (ii) it receives automatically under the provisions of tax law a given percentage of the tax collected or arising in its territory.

b. Non-monetary transactions

34. Non-monetary transactions are transactions that are not initially stated in units of currency. The entries in the System therefore represent values that are indirectly measured or otherwise estimated. In some cases, the transaction may be an actual one, and a value has to be estimated to record it in the accounts. Barter is an obvious example. In other cases, the entire transaction must be constructed and then a value estimated for it. Consumption of fixed capital is an example. (In the past, the estimation of a value has sometimes been called imputation, but it is preferable to reserve that term for the kind of situation that involves not only estimating a value but also constructing a transaction.)

35. The amounts of money associated with non-monetary transactions are entries whose economic significance is different from cash payments as they do not represent freely disposable sums of money. The various methods of valuation to be employed for non-monetary transactions are dealt with in the general section on valuation.

36. Non-monetary transactions can be either two-party transactions or actions within an institutional unit. The two-party transactions consist of barter, remuneration in kind, payments in kind other than compensation in kind and transfers in kind. These two-party transactions will be discussed first, followed by a discussion of internal transactions.

(i) Barter transactions

37. Barter transactions involve two parties, with one party providing a good, service or asset other than cash to the other in return for a good, service or asset other than cash. As mentioned above, barter is an example of an actual transaction for which a value must be estimated. Barter transactions in which goods are traded for goods have always been important. The barter of goods may be systematically organised on proper markets or, in some countries, may occur only sporadically on a small scale. Barter between nations - thus involving exports and imports - also occurs.

(ii) Remuneration in kind

38. Remuneration in kind occurs when an employee accepts payment in the form of goods and services instead of money. This practice is extensive in most economies, for reasons ranging from the desire of employers to find captive markets for part of their output to tax avoidance or evasion. There are various forms, and the following list includes some of the most common types of goods and services provided without charge, or at reduced prices, by employers to their employees:

- meals and drinks;
- housing services or accommodation of a type that can be used by all members of the household to which the employee belongs;
- the services of vehicles provided for the personal use of employees;
- health or other insurance provided to individual employees under individual insurance policies;
- goods and services produced as outputs from the employer's own processes of production, such as free coal for miners;

Also, some employees may be willing, or obliged, to accept part of their compensation in the form of financial or other assets. For example, employees may receive their remuneration partly in the form of shares in the corporation in which they are employed.

(iii) Payments in kind other than remuneration in kind

39. Payments in kind other than remuneration in kind occur when any of a wide variety of payments are made in the form of goods and services rather than money. For example, a doctor may accept payment in wine instead of money. Or, instead of paying rent or rentals in money, the user of land or fixed capital, respectively, may pay the owner in goods or services. In agriculture, for example, the "rent" may be paid by handing over part of the

crops produced to the landlord - i.e., share cropping. Tax payments, too, may be paid in kind; for example, inheritance taxes may be paid by making donations of paintings or other valuables.

(iv) Transfers in kind

40. Transfers in kind also are two-party transactions, but - in contrast to those just mentioned - one party provides a good, service or asset other than cash to the other without receiving a counterpart in return. Parallel to transfers in cash, these are called sometimes "something for nothing" transactions or transactions without a quid pro quo.

41. The System records a variety of transfers in kind, including government international cooperation, gifts, charitable contributions and social transfers in kind. The last consist of social security and social assistance benefits in kind together with goods and services provided to individual households outside any social insurance scheme by non-market producers owned by government units or non-profit institutions (NPIs). Government international co-operation, gifts, and charitable contributions are often made in kind for convenience, efficiency, or tax purposes. For example, international aid after a natural disaster may be more effective and delivered faster if made directly in the form of medicine, food, and shelter instead of money. Charitable contributions in kind sometimes avoid taxes that would be due if the item in question were sold and the money given to the charity.

42. For various reasons, many social security and social assistance benefits are provided in kind rather than in cash. Rather than provide a specified amount of money to be used to purchase, for example, medical and educational services, the services are often provided in kind to make sure that the need for the services is met. Sometimes the recipient purchases the service and is reimbursed by the insurance or assistance scheme. Such a transaction is still treated as being in kind because the recipient is merely acting as the agent of the insurance scheme. Social transfers in kind, other than social security or social assistance benefits, consist mostly of education, health, housing and other services provided to individual households by non-market producers owned by government units or NPIs.

43. Social transfers in kind involve two sets of transactions. The expenditures on the final consumption goods and services provided as social transfers in kind are recorded as being incurred by the government units (including social security schemes) or NPIs that incur the costs. These may be either monetary or non-monetary transactions depending upon whether the goods or services are purchased from market producers or produced by non-market producers owned by the government units or NPIs. The social transfers in kind, as such, are then recorded as a set of non-monetary transactions between the government units or the NPIs and the households who actually consume the goods or services, the goods and services being valued by the expenditures already incurred on them. The value of these goods and

services is then added to the final consumption expenditures of households to obtain their actual consumption.

(v) Internal transactions

44. The System treats as transactions certain kinds of actions within a unit to give a more analytically useful picture of final uses of output and of production. These transactions that involve only one unit are called internal, or intra-unit, transactions.

45. Many institutional units - households, NPIs serving households and general government - operate as producers and consumers. When an institutional unit engages in both production and final consumption, it may choose to consume some or all of the output it has produced itself. In such a case, no transaction takes place between institutional units, but it is useful to construct a transaction and estimate its value to record such output and consumption in the accounts.

46. For households, the principle in the System is that all goods produced by persons that are subsequently used by the same persons, or members of the same households, for purposes of final consumption are to be included in output in a manner analogous to that for goods sold on the market. This means that transactions are assumed in which the persons responsible for the production of the goods are deemed tc deliver the goods to themselves, or members of their own households, and then values have to be associated with them in order to enter them in the accounts.

47. Establishments owned by governments or NPIs commonly provide education, health, or other kinds of services to individual households without charge or at prices that are not economically significant. The costs of providing these services are incurred by the governments or NPIs, and the values are recorded as internal transactions: that is, as final expenditures by governments or NPIs on outputs produced by establishments they own themselves. (As already explained, the acquisition of these services by households is recorded separately under social transfers in kind, another form of non-monetary transactions that take place between the government units or NPIs and the households in question.)

48. The System recognises several other transactions within enterprises to give a fuller view of production. For example, when enterprises produce fixed assets for their own use, the System records deliveries by the enterprises to themselves as the subsequent users. Also, when enterprises use fixed assets - whether own-account or purchased - during production, the System charges the decline in the value of the asset during the period of production as a cost.

49. Further, when a single enterprise consists of two or more establishments, the System records transactions when goods or services produced in one establishment are delivered to another establishment belonging

to the same enterprise for use as intermediate consumption. (On the other hand, when goods or services produced within a single establishment are fed back into intermediate consumption within the same establishment, no intra-unit transactions are recorded.)

50. The System's usual methods of identifying the parties to a transaction - as the institutional units that own or previously owned the goods and assets involved, the units that deliver or take delivery of service, or the units that provide labour or capital or use them - are not directly applicable to internal transactions. The internal transaction involving deliveries of goods and service between establishments just mentioned is an example; the enterprise owns the good or service, but in fact does not provide the information needed to record the flow between its establishments. Another example is the withdrawals of income from quasi-corporations by their owners. Usually, the question of the transactors' identification is resolved by the definition of the transaction itself, but resort may have to be made to approximations available in the books of the institutional unit or based on physical location. (These same methods may be used to allocate other transactions of an institutional unit to its establishments.)

c. Externalities and illegal actions

51. The sections above discussed the kinds of actions that are considered transactions in the System. This section focuses on externalities and illegal actions, explaining why externalities are not considered transactions and distinguishing among kinds of illegal actions that are and are not considered transactions.

(i) Externalities

52. Certain economic actions carried out by institutional units cause changes in the condition or circumstances of other units without their consent. These are externalities: they can be regarded as unsolicited services, or disservices, delivered without the agreement of the units affected. It is an uncooperative action, usually with undesirable consequences, which is the antithesis of a market transaction. A typical example is the pollution by a producer of air or water used by other units for purposes of production or consumption. If the producer is allowed to pollute without charge or risk of being penalised, the private costs of production of the polluter will be less than the social costs to the community.

53. It is necessary to consider, however, whether values should be assigned to such externalities. Economic accounts have to measure economic functions such as production or consumption in the context of a particular legal and socio-economic system within which relative prices and costs are determined. Some countries, at least at certain points in their history, may choose to frame their laws so that some producers are permitted to reduce their private costs by polluting with impunity. This may be done deliberately to promote

rapid industrialisation, for example. The wisdom of such a policy may be highly questionable, especially in the long run, but it does not follow that it is appropriate or analytically useful for economic accounts to try to correct for presumed institutional failures of this kind by attributing costs to producers that society does not choose to recognise.

54. Further, there would be considerable technical difficulties involved in trying to associate economically meaningful values with externalities when they are intrinsically non-market phenomena. As externalities are not market transactions into which institutional units enter of their own accord, there is no mechanism to ensure that the positive or negative values attached to externalities by the various parties involved would be mutually consistent. Moreover, accounts including values for externalities could not be interpreted as representing equilibrium, or economically sustainable, situations. If such values were to be replaced by actual payments the economic behaviour of the units involved would change, perhaps considerably. For example, the whole purpose of trying to internalise some externalities by imposing taxes or other charges on the discharge of pollutants is to bring about a change in production methods to reduce pollution. A complete accounting for externalities also would be extremely complex as it is not sufficient merely to introduce costs into the accounts of the producers. It also would be necessary to introduce various other adjustments of questionable economic significance to balance the accounts.

(ii) Illegal actions

55. Illegal actions that fit the characteristics of transactions - notably the characteristic that there is mutual agreement between the parties - are treated the same way as legal actions. The production or consumption of certain goods or services, such as narcotics, may be illegal but market transactions in such goods and services have to be recorded in the accounts. If expenditures on illegal goods or services by households were to be ignored on grounds of principle, household saving would be overestimated and households presumed to acquire assets that they do not in fact acquire. Clearly, the accounts as a whole are liable to be seriously distorted if monetary transactions that in fact take place are excluded. Of course, it may be difficult, or even impossible, to obtain data about illegal transactions, but in principle they should be included in the accounts if only to reduce error in other items, including balancing items.

56. However, many illegal actions are crimes against persons or property that in no sense can be construed as transactions. For example, theft can scarcely be described as an action into which two units enter by mutual agreement. Conceptually, theft or violence is an extreme form of externality in which damage is inflicted on another institutional unit deliberately and not merely accidentally or casually. Thus, thefts of goods from households, for example, are not treated as transactions and estimated values are not recorded for them under household expenditures.

57. If thefts, or acts of violence (including war), involve significant redistributions, or destructions, of assets, it is necessary to take them into account. As explained below, they are treated as other flows, not as transactions. Less significant redistributions, such as shoplifting, may be included in change of inventories and therefore need not be recorded separately.

2. Other flows

58. Other flows are changes in the value of assets and liabilities that do not take place in transactions. Although these entries, which are all in the Other Changes in the Volume of Assets Account and the Revaluation Account (which make up the Other Changes in Assets Accounts), do share the characteristic that they record changes that are not the result of transactions, they cover very different kinds of changes in assets and liabilities. The first kind consists of changes due to factors such as discoveries or depletion of subsoil resources, destruction by war or other political events or destruction by natural catastrophes, all of which actually change the volume of assets. The second kind consists of changes in the value of assets, liabilities, and net worth due to changes in the level and structure of prices, which are reflected in holding gains and losses.

a. Other changes in the volume of assets

59. Other changes in the volume of assets fall into three main categories. The reason that these flows are not transactions is linked to their not meeting one or more of the characteristics of transactions - for example, the institutional units involved may not be acting by mutual agreement, as with an uncompensated seizure of assets.

60. The first category relates to entrances and exits of assets and liabilities to or from the System in the normal course of events other than by transactions. Some of these may relate to naturally occurring assets, such as subsoil assets, so that the entrances and exits come about as interactions between institutional units and nature. Others relate to assets created by human activity, such as valuables. For valuables, for example, the Capital Account records their acquisition as newly produced goods or imports in transactions, and it records transactions in existing goods already classified as valuables. It is the recognition of a significant or special value for goods that are not already recorded in the Balance Sheets that is considered an economic appearance to be recorded as an other - that is, non-transaction - flow. These valuables may not be in the Balance Sheets for any of several reasons: they antedate the accounts, or they were originally recorded as consumption goods.

61. The second category relates to the effects of exceptional, unanticipated events that affect the economic benefits derivable from assets (and corresponding liabilities). One such event is one institutional unit's

effectively removing an asset from its owner without the owner's agreement, an action that is not considered a transaction because the element of mutual agreement is absent. These events also include those that destroy assets, such as natural disaster or war, or affect the consumption of fixed capital. In contrast, transactions, such as consumption of fixed capital or change in inventories, refer to normal rates of loss or destruction.

62. The third category relates to changes in assets and liabilities that reflect changes in the classification of institutional units among sectors and in the structure of institutional units, or in the classification of assets and liabilities. For example, if an unincorporated enterprise becomes more financially distinct from its owner and takes on the characteristics of a quasi-corporation, it and the assets and liabilities it holds move from the household sector to the non-financial corporations sector; movements of the assets and liabilities are considered other flows in this category.

b. Holding gains and losses

63. Positive or negative nominal holding gains may accrue during the accounting period to the owners of financial and non-financial assets and liabilities as a result of a change in their prices. Holding gains are sometimes described as "capital gains", but "holding gain" is preferred here because it emphasizes that holding gains accrue purely as a result of holding assets over time without transforming them in any way. Holding gains include not only gains on "capital" such as fixed assets, land and financial assets but also gains on inventories of all kinds of goods held by producers, including work-in-progress, often described as "stock appreciation". Holding gains may accrue on assets held for any length of time during the accounting period, not only on assets held at the beginning or end of the period.

64. Nominal holding gains depend upon changes in the prices of assets and liabilities over time. The prices in question are the prices at which the assets may be sold on the market. Nominal holding gains may be further decomposed into neutral holding gains that reflect changes in the general price level and real holding gains that reflect changes in the relative prices of assets.

3. Balancing items in the flow accounts

65. A balancing item is an accounting construct obtained by subtracting the total value of the entries on one side of an account from the total value for the other side. It cannot be measured independently of the other entries; as a derived entry, it reflects the application of the general accounting rules to the specific entries on the two sides of the account. It does not relate to any specific set of transactions, and so it cannot be expressed in terms of its own price or quantity units.

66. Although each account has a balancing item, balancing items are not simply devices introduced to ensure that accounts balance. They encapsulate a great deal of information and include some of the most important entries in the accounts, as can be seen by the examples of balancing items for the accounts containing flows reproduced below.

- Value added/domestic product
- Operating surplus
- Disposable income
- Saving
- Net lending/net borrowing
- Current external balance

D. Stocks

1. Stocks

67. Stocks are a position in, or holdings of, assets and liabilities at a point in time. The System records stocks in accounts, usually referred to as balance sheets, and tables at the beginning and end of the accounting period. However, stocks are connected with flows: they result from the accumulation of prior transactions and other flows, and they are changed by transactions and other flows in the period. They result in fact from a continuum of entries and withdrawals, with some changes, in volume or in value, occurring during the time a given asset or liability is held.

68. Values are recorded for non-financial assets, both produced and non-produced, and for financial assets and liabilities. The coverage of assets is limited to those assets used in economic activity and that are subject to ownership rights. For example, most consumer durables, human capital and natural resources that are not capable of bringing economic benefits to their owners are excluded.

2. Balancing items in the Balance Sheets

69. Net worth, which is defined as the value of all the non-financial and financial assets owned by an institutional unit or sector less the value of all its outstanding liabilities, is the balancing item in the Balance Sheets. As is true for other balancing items in the system, net worth cannot be measured independently of the other entries, and it does not relate to any specific set of transactions.

E. Accounting Rules

70. The valuation, time of recording and grouping by aggregation, netting and consolidation of the individual flows and stocks is explained in detail in the chapters that describe the entries in the various tables and accounts of the central framework. This section aims to set out the basic rules underlying the System.

F. Valuation

1. General rules

71. The power of the SNA as an analytical tool stems largely from its ability to link numerous, very varied economic phenomena by expressing them in a single accounting unit. The System does not attempt to determine the utility of the flows and stocks which come within its scope. Rather, it measures the current exchange value of the entries in the accounts in money terms, i.e., the values at which goods and other assets, services, labour or the provision of capital are in fact exchanged or else could be exchanged for cash (currency or transferable deposits).

72. When institutional units exchange these items with other institutional units for cash, the values required by the System are directly available. These transactions are recorded at the actual exchange value agreed upon by the two partners. Furthermore, of course, the values for all flows and stocks that concern cash holdings and liabilities are directly known.

73. In respect of all remaining flows and stocks, no actual exchange values are at hand, so their values must be assessed indirectly. These values should be taken from markets in which the same or similar items are traded currently in sufficient numbers and in similar circumstances against cash. The selection of the appropriate reference markets requires that attention be paid to differences between wholesale and retail markets, regional divergences, etc. Non-monetary transactions in existing goods often can be valued at the market price for similar new goods, if properly adjusted for consumption of fixed capital and other elements, such as unanticipated damage, which may have accrued to the asset since the time it was produced.

74. If there is no appropriate market from which the value of a particular non-monetary flow or stock item can be taken by analogy, as a second best, its valuation could be derived from prices that are established in less closely related markets. Ultimately, some goods and services can only be valued by the amount that it would cost to produce them currently. Market goods and services valued in this way should include a mark-up that reflects the operating surplus or mixed income attributable to the producer. For non-market goods and services, however, no allowance should be made for any

operating surplus (with one exception, imputed rental of government buildings, as described in <<chapter VI, The Production Account, paragraphs 97-99>>).

75. Sometimes it is necessary to value stocks at appropriately revalued and written down historic purchase prices or production costs. The write-down should then include all changes which have occurred to the item since it was purchased or produced (such as consumption of fixed capital, partial depletion, exhaustion, degradation, unforeseen obsolescence, exceptional losses and other unanticipated events). The same method could be applied to non-monetary flows of existing assets.

76. If none of the methods mentioned above can be applied, flows and stocks are to be recorded at the discounted present value of expected future returns. Although this method is theoretically entirely justified, it is not generally recommended since it involves many assumptions and as a consequence the outcomes are highly speculative.

77. Flows and stocks concerning foreign currency are converted to their value in national currency at the rate prevailing at the moment they are entered in the accounts, i.e., the moment the transaction or other flow takes place or the moment to which the balance sheet applies. The midpoint between the buying and selling rate should be used so that any service charge is excluded. In conformity with the general rule, provision of assets, services, labour or capital in exchange for foreign cash is recorded at the actual exchange value agreed upon by the two parties to the transaction. The exchange value should then be converted to national currency at the midpoint rate prevailing at the time the transaction takes place. That moment may be different from the times the payments are made; as a result, the value in national currency of the transactions in question may differ from the value in national currency of the related payments when they take place.

78. Business accounts, tax returns and other administrative records are main sources of data for drawing up the national accounts. One should be aware, however, that none of these necessarily satisfies the valuation requirements of the System and that accordingly adjustments may have to be made. In particular, in the interest of prudence, business accounting often adopts valuations that are not appropriate for the national accounts. Similarly, valuations for tax purposes often serve objectives that differ from those of macro-economic analysis. For example, the depreciation methods favoured in business accounting and those prescribed by tax authorities invariably deviate from the concept of consumption of fixed capital employed in the System.

2. Partitioned transactions

79. Extending the general rule in <<paragraph 72>>, where a single payment refers to more than one transaction category (such as they are defined in the System), the individual flows need to be recorded separately. For example, the System divides interest transactions with financial enterprises over two transaction categories: one standing for pure interest and the other representing the implicit payment for financial intermediation services. Earlier in this chapter, the partitioning of financial leasing and transactions of wholesalers and retailers were discussed. Partitioning is not limited to transactions; an example is real holding gains, which are separated for analytical reasons from neutral holding gains that represent changes in the general purchasing power of money.

80. In some cases partitioning is connected with deceptive behaviour. Values put on an invoice may deviate systematically or to such a large extent from the prices paid in the market for similar items that it must be presumed that the sums paid cover more than the specified transactions. An example is so-called transfer pricing: affiliated enterprises may set the prices of the transactions among themselves artificially high or low in order to effect an unspecified income payment or capital transfer. Such transactions should be made explicit if their value is considerable and would hinder a proper interpretation of the accounts.

81. A less obvious mingling of transactions occurs when the provision of an asset and the related money payment or payments do not take place simultaneously. When the time gap becomes unusually long and the amount of trade credit extended is very large, the conclusion may be that implicitly an interest fee has been charged. In such extreme cases, the actual payment or payments should be adjusted for accrued interest in order to arrive at the correct value of the asset transferred. Such adjustments are not recommended for normal trade credit.

3. Special valuations concerning products

82. Usually, the producer and the user of a given product perceive its value differently owing to the existence of taxes and subsidies on products, transport costs to be paid and the occurrence of trade margins. In order to keep as close as possible to the views of the economic transactors themselves, the System records all uses at purchasers' prices including these elements, but excludes them from the value of output of the product.

83. Output of products is recorded at basic prices, i.e., the price received by the producer for a unit of good or service produced as output excluding any tax payable or subsidy receivable on the product as a consequence of its sale or use. It excludes also any delivery charges invoiced separately by the producer. Only if it proves impossible to obtain the required information at basic prices, output may be valued at producers' prices. The producers' price is defined as the price received by a producer for a unit of a good or service

produced as output including taxes payable and subsidies receivable on the product as a consequence of its sale or use (by the producer), except invoiced value added tax (VAT) or similar taxes.

84. Use of products is recorded at purchasers' prices, i.e., the price paid by the purchaser, excluding any VAT or similar deductible tax, and including any transport charges and transfer costs paid separately by the purchaser to other institutional units in order to take delivery at the required time and place.

85. The difference in value recorded for a product between when it is produced and the moment it is used for, say, final consumption expenditure can be considerable. Components of this difference may be:

(1) taxes less subsidies on products payable by the producer;

(2) trade and transport margins, including taxes less subsidies on products payable by wholesale and retail traders;

(3) transport including taxes less subsidies on products paid separately by the consumer;

(4) predictable quality increases producing additional output volume less current losses during storage;

(5) holding gains while the product is with the producer and with wholesale and retail traders.

As one can see from this list, the difference between the original basic price and ultimate purchasers' price of a particular good encompasses both pure price and volume elements. In practice, of course, the estimates do not keep track of individual products but are made at a more global level for groups of products.

86. Imports and exports of goods are recorded in the System at border values. Total imports and exports of goods are valued free-on-board (f.o.b., that is, at the exporter's country border). As it may not be possible to obtain f.o.b. values for detailed product breakdowns, the tables containing details on foreign trade show imports of goods valued at the importer's country border (c.i.f. value), supplemented with global adjustments to f.o.b. C.i.f. values include the insurance and freight charges incurred between the exporter's border and that of the importer. The value on the commercial invoice may of course differ from both of these.

87. As the overall balance of imports and exports must conform to actual circumstances, border valuation of goods has consequences for the recording of freight and insurance in the System. Usually, the values of both imports and exports for these service items have to be adapted to compensate for the special conventions on goods trade with the rest of the world. Further

details on this treatment are in <chapters XIV, The External Account, and XV, Supply and Use Tables and Input-Output>.

G. Time of Recording

1. Introduction

88. When discussing timing in the System, an essential distinction should be made between stock data as recorded in Balance Sheets, on the one hand, and flow data as recorded in the accounts, on the other. Balance Sheets, by definition, refer to specific points in time. In contrast, flows are aggregations, over some chosen accounting period, of individual transactions or other flows, which are themselves scattered over the accounting period.

89. Thus, the System does not show individual transactions or other flows, but there are two reasons why precise rules on their individual timing must be given. First, rules have to be formulated to say in which accounting period the discrete flows are to be recorded. Secondly, an exact timing of individual flows within the accounting period is crucial to make the distinction between changes in net worth due to transactions and those due to holding gains or losses. This distinction is particularly important in situations of high inflation.

90. One of the problems in pinning down the timing of transactions is that activities of institutional units often stretch over periods in which several important moments can be distinguished. For instance, many commercial sales commence with the signing of a contract between a seller and a buyer, encompass a date of delivery and a date or dates on which payments become due and are only completed as of the date the last payment is received by the seller. Each of these distinct moments in time is to some extent economically relevant.

91. Similarly, in analysing public spending one can distinguish the day that a budget is voted upon by the legislature, the day on which the ministry of finance authorises a department to pay out specified funds, the day a particular commitment is entered into by the departments, the day deliveries take place and finally the days payment orders are issued and checks are paid. Regarding taxes, for example, important moments are the day or the period in which the liability arises, the moment the tax liability is definitively assessed, the day that it becomes due for payment without penalty and the day the tax is actually paid or refunds are made.

92. Clearly, making entries for all successive stages discernible within the activities of institutional units, although theoretically possible, would severely overburden the System. A choice has to be made, recognizing (i) the needs of macro-economic analysis, (ii) micro-economic views and (iii) commonly available sources. Often, in this respect, a distinction is drawn between

recording flows on a cash basis, due-for-payment basis and accrual basis. The System recommends recording on an accrual basis throughout.

2. The choice for recording on an accrual basis

93. Some statistics closely related to the SNA, most notably the IMF Government Finance Statistics, recommend recording on a cash basis, at least in respect of aggregate data. Cash accounting records only cash payments and records them at the times these payments occur. This method is widely used to record government revenues and expenditures and it is also employed for certain business purposes. A practical advantage is the avoidance of problems connected with valuing non-monetary flows. Yet, cash accounting cannot be used generally for economic and national accounting as the times at which payments take place may diverge significantly from the economic activities and transactions to which they relate and it is these underlying activities and transactions that the System seeks to portray. Moreover, cash recording cannot be applied to the many non-monetary flows included in the System.

94. Due-for-payment recording shows flows which give rise to cash payments at the latest times they can be paid without incurring additional charges or penalties and, in addition to these, actual cash payments at the moments they occur. The period of time (if any) between the moment a payment becomes due and the moment it is actually made is bridged by recording a receivable or a payable in the financial accounts. Due-for-payment recording furnishes a more comprehensive description of monetary flows than does cash accounting. A disadvantage is, of course, that the registration is still limited to monetary flows.

95. Accrual accounting records flows at the time economic value is created, transformed, exchanged, transferred or extinguished. This means that flows which imply a change of ownership are entered when ownership passes, services are recorded when delivered, output at the time products are created and intermediate consumption when materials and supplies are being used. The System favours accrual accounting because:

(1) The timing of accrual accounting is in full agreement with the way economic activities and other flows are defined in the System. This agreement allows one, for instance, to evaluate the profitability of productive activities correctly (i.e., without the disturbing influence of leads and lags in cash flows) and to calculate a sector's net worth correctly at any point in time.

(2) Accrual accounting can be applied to non-monetary flows.

96. Many transactions, such as everyday purchases of households in shops, are monetary transactions in which some asset is delivered against immediate, or nearly immediate, payment in cash. In those instances there are no differences between the three methods discussed here. Accrual accounting is

particularly relevant to the timing of various internal transactions (such as output that is added to the inventories of the producer), exchanges in which the parties deliver at differing times (such as sales with deferred payments) and obligatory transfers (taxes and flows connected with social security).

97. Usually, accrual accounting arises naturally to the institutional units involved. Numerous transactions consist of an exchange between two enterprises of, say, goods for financial assets. In such an exchange, accounting entries will be made in the books of each enterprise, showing the same dates for the acquisition of the goods and the surrender of the financial assets, on the one hand, and for the acquisition of the financial assets and the surrender of the goods, on the other. Sometimes, however, the two parties involved in a transaction will not perceive it as occurring at the same moment. Furthermore, some transactors, in particular government units, do not keep records of purchases on a change of ownership basis. In these cases, the rules of consistency in the System require that efforts should be undertaken to correct basic statistics for major deviations and flaws. Below, the application of the general rule of recording on an accrual basis to the most common circumstances is discussed.

3. The timing of exchanges and transfers

98. Regarding exchanges and transfers of non-financial assets, the accrual principle usually comes down to recording at the moment when the legal ownership of those assets passes. When change of ownership is not obvious, the moment of entering in the books of the transaction partners may be a good indication, and, failing that, the moment when physical possession and control is acquired. These subsidiary rules apply in particular to internal transactions or when a change of ownership is taken to occur under a financial lease or hire-purchase arrangement. Imports and exports of goods are recorded when change of ownership occurs. In the absence of sources specifying the date on which ownership changes, there is a strong presumption that the good will cross the frontiers of the countries concerned either shortly before or soon after the change of ownership takes place and trade statistics based on customs documents reflecting the physical movement of goods across the national or customs border may often be used as an approximation.

99. Services are recorded in the System when they are delivered. Some services are special in the sense that they are characteristically supplied on a continuous basis. Examples are operating leasing, insurance and housing services (including those of owner-occupied dwellings). These services are recorded as delivered continuously over the whole period the contract lasts or the dwelling is available.

100. Following the general rule, distributive transactions are recorded at the moment the related claims arise. So, e.g., compensation of employees, interest, rent on land, social contributions and benefits are all registered in the period during which the amounts payable are built up. Equally, entries for taxes are made at the moment on which the underlying transactions or other

flows occur which give rise to the liability to pay. This implies that taxes on products and imports are recorded at the times the products in question are produced, imported or sold, depending on the basis for taxation. Current taxes on income are recorded when the income to which they pertain is earned. With respect to some distributive transactions, the time of accrual depends on the unit's decision when to distribute income or make a transfer. The level of dividends is not unambiguously attributable to a particular earning period, and dividends are to be recorded as of the moment they are declared payable. Other examples are withdrawals from income of quasi-corporations and various voluntary transfers, which are recorded when effectuated.

101. Transactions in financial assets (including payments of cash) are recorded in the System on a change-of-ownership basis. Some financial claims/liabilities defined in the System, in particular trade credits and advances, are the implicit result of a non-financial transaction and do not involve an explicit piece of evidence. In these cases, the financial claim is deemed to arise when its non-financial counterpart occurs. The same holds for financial transactions that the System records between a quasi-corporation and its owner.

102. Both parties involved in a financial transaction may record it at varying dates in their own books because they acquire the documents evidencing the transaction at different times. This variation is caused by the process of clearing, the time cheques are in the mail, etc. The amounts involved in such "float" are generally substantial in the case of transferable deposits and other accounts receivable and payable. Again, reasons of consistency require that the transactions are entered on the same date for both parties. If no precise date can be fixed on which the change of ownership occurs, the date on which the transaction is fully completed (thus the date on which the creditor receives his payment) is decisive.

4. The timing of output and intermediate consumption

103. The principle of recording on an accrual basis implies that output is recorded over the period in which the process of production takes place. Thus, additions to work-in-progress are recorded continuously as work proceeds. When the production process is terminated, the whole of the work-in-progress accumulated up to that point is effectively transformed into a stock of finished product ready for delivery or sale.

104. Similarly, the intermediate consumption of a good or service is recorded at the time when the good or service enters the process of production, as distinct from the time it was acquired by the producer.

5. The timing of changes in inventories and consumption of fixed capital

105. Inventories may be materials and supplies held as inputs by producers, output as yet unsold, or products held by wholesale and retail traders. In all cases, additions to inventories are recorded when products are purchased, produced or otherwise acquired. Removals from inventories are recorded when products are sold, used up as intermediate consumption or otherwise relinquished.

106. The timing of consumption of fixed capital is nearly inseparably linked with the question of its valuation. Consumption of fixed capital is a cost category which accrues over the whole period the fixed asset in question is available for productive purposes. The exact proportioning to accounting periods depends on the depreciation method chosen. The System does not contain a particular recommendation in this respect (see <chapter VI, The Production Account>).

6. The timing of composite transactions and balancing items

107. Transactions which are defined as the balance of two or more other transactions follow the timing of the constituent basic flows. For example, financial intermediation services indirectly measured are entered according to the moments property income is earned on funds put out by financial intermediaries and interest payable by these units accrues. The same rule applies to balancing items.

108. In order to yield significant balancing items, the System aims at timing resources in the same period as related uses (and in particular at matching output with the various costs of production). However, due to the variety of transactions and other flows covered, each with its own characteristics, some thought is needed in interpreting balancing items. For instance, in analysing the balancing item "saving" of non-financial corporations, one should be aware that the time when the operating surplus arises does not necessarily tally with the timing of the other factors, such as when dividends are payable.

7. The timing of other flows

109. Other volume changes in assets are usually discrete events which accrue at precise moments or within fairly short periods of time. Changes in prices often have a more continuous character, particularly in respect of assets for which active markets exist. In practice, nominal holding gains or losses will be computed between two points in time:

a) the moment on which

(1) the accounting period begins;

or

(2) ownership is acquired from other units (through purchase or a transaction in kind);

or

(3) an asset is produced;

and

b) the moment on which:

(4) the accounting period ends;

or

(5) the ownership of an assets is relinquished (through sale or a transaction in kind);

or

(6) an asset is consumed in the production process.

110. One may wonder why nominal holding gains and losses are not calculated over a period beginning at the moment on which two units agree to a mutual exchange of assets instead of the period which starts with the moment on which the assets are acquired. After all, does not the signing of the contract fix prices, implying that the risk for any later price changes is being transferred? The System, however, regards commitments resulting from a contract as contingent until one of the parties has performed its obligation (by passing the ownership of some asset to the other party, providing a service or providing labour or capital). Also, a unit can incur holding gains and losses exclusively on the assets or liabilities it effectively holds. The combination of these two rules implies that during the period between the signing of the contract and the date on which the first party delivers, the second party cannot incur any price risks on this contract: the second party neither owns the assets to be delivered nor owns a claim on the first party to be recorded in the financial accounts.

111. Changes in structure and classification should be entered at the very moment when, according to the rules adopted in the System, a unit or an asset comes into a different category than it was classified previously. An integrated stock-flow system like the SNA requires that all reclassifications be recorded. Consequently, such a system does not allow reclassifications between two consecutive accounting periods.

112. In order to obtain statistical series which are more comparable over time, one might be tempted to stockpile major reclassifications for a number of years and enter them as one block at the end of this period. However understandable this procedure might be, it does not conform to the System's recommendations, which aim at correct estimates on levels. Keeping records of

reclassifications makes it possible in principle to reconstruct time series based on the situation in any accounting period.

8. Balance sheet items

113. Fundamentally, balance sheets can be drawn up at any point in time. The System defines balance sheets for all sectors at the moment when one accounting period ends and a new accounting period begins. The closing balance sheet of one period is identical to the opening balance sheet of the next one, so there remain no price changes, reclassifications or other economic flows which are not duly recognized by the System.

9. The accounting period

114. In principle, any lapse of time may be chosen as the accounting period. Periods that are too short have the disadvantage that statistical data are influenced by incidental factors, while long periods do not adequately portray changes going on in the economy. Merely seasonal effects can be avoided by having the accounting period cover a whole cycle of regularly recurrent economic phenomena. Most business and government accounting refers to complete years. In general, calendar years or quarters are best suited for drawing up a full set of national accounts tables.

H. Aggregation, Netting, Consolidation

1. Aggregation

115. The immense number of individual transactions, other flows and assets within the scope of the SNA have to be arranged in a manageable number of analytically useful groups. In the System, such groups are constructed by crossing two or more classifications. As a minimum, a combination of the "who" and "what" questions asked in <chapter II, Overview> is made, i.e., a classification of institutional sectors or industries is crossed with the classification of transactions, other accumulation entries or assets. Additionally, resources must be distinguished from uses and assets from liabilities. In order to accommodate more detailed analysis, the classes thus generated may be further subdivided: examples are specifications of "in what" (kind of product or asset), of "why" (function) and of "with whom" (transaction partners).

116. Since the classifications in the System contain a number of levels made explicit in the codes, corresponding levels of aggregation may be distinguished.

117. Although conceptually the value for each aggregate is the sum of the values for all elementary items in the relevant category, in practice other

estimation methods are frequently used. First, information on elementary transactions, other flows and assets may be incomplete or even non-existent. Secondly, the data obtained from different primary sources are usually not fully consistent due to deviating definitions and varying coverage, and adjustments at aggregate level are necessary to reconcile them. The practical techniques for estimating and balancing national accounts data are to be extensively discussed in Handbooks.

2. Netting

118. Individual units or sectors may have the same kind of transaction both as a use and as a resource (e.g., they both pay and receive interest) and the same kind of financial instrument both as an asset and as a liability. Combinations in which all elementary items are shown for their full values are called gross recordings. Combinations whereby the values of some elementary items are offset against items on the other side of the account or which have an opposite sign are called net recordings.

119. The System recommends gross recording apart from the degree of netting which is inherent in the classifications themselves. In fact, netting is already a feature of many of the System's recommendations. It mostly serves to highlight an economically important property which is not apparent from gross data.

120. Netting is implicit in various transaction categories, the most outstanding example being "changes in inventories", which underlines the analytically significant aspect of overall change in capital formation rather than tracking daily additions and withdrawals. Similarly, the Financial Account and Other Changes in Assets Accounts record increases in assets and in liabilities on a net basis, bringing out the final consequences of these types of flows at the end of the accounting period. Of course, all balancing items involve netting as well. To avoid confusion, the System uses the words "gross" and "net" in a very restrictive sense. Apart from in "net equity of households on life insurance reserves and pension funds", "net worth and net lending/net borrowing", the System's classifications employ the word "net" exclusively to indicate the value of variables after deduction of consumption of fixed capital.

121. The System defines one situation in which exactly the opposite of netting should be applied. A grossing up is recommended in respect of processing to order vis-a-vis the rest of the world. In agreement with external trade statistics, this type of processing is not recorded "net" as a service item. Instead, the movement of goods before and after processing is registered as imports and exports for their full value as if they were purchased and subsequently sold back.

3. Consolidation

122. Consolidation is a special kind of cancelling out of flows and stocks which should be distinguished from other kinds of netting. It involves the elimination of those transactions or debtor/creditor relationships which occur between two transactors belonging to the same institutional sector or sub-sector. Consolidation should not be seen as a sheer loss of information; it entails an elementary specification by transaction partner. Consolidation may be most relevant for monetary institutions and general government. For certain kinds of analysis, information on the transactions of these (sub)sectors with other sectors and the corresponding "external" financial position is more significant than overall gross figures. As a rule, however, the entries in the System are not consolidated.

123. The rule of non-consolidation takes a special form regarding the transaction categories "output" and "intermediate consumption". These transactions are to be recorded throughout at the level of establishments. This implies specifically that the accounts for institutional sectors should not be consolidated in respect of output delivered between establishments belonging to the same institutional unit.